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Title : BEHAVIORAL FLEXIBILITY IN FORAGING DUSKY DOLPHINS

Category : Behavior

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Abstract : Foraging theory suggests that hungry animals balance a complex set of costs and benefits when determining what and how to eat. Prey distribution, patch size, and the presence of conspecifics are important factors influencing a predator's feeding tactics, including the decision to feed individually or socially. Dusky dolphins (Lagenorhynchus obscurus) in New Zealand employ different feeding tactics when moving between varying habitats and seasons. We used programmed survey routes, opportunistic sightings, and remote sensing of prey to examine day-time foraging of dusky dolphins in Admiralty Bay, New Zealand, a protected shallow-water environment frequented by wintering dolphins. Thirty-seven feeding groups and 70 bouts of feeding behavior were followed. Two-minute interval sampling and active acoustic sonar were used to test the hypothesis that diurnally-feeding dolphins would work in a coordinated manner to bring schooling fish to the surface. Feeding tactics observed in Admiralty Bay were then compared to foraging by some of the same animals in the unprotected deep-water environment off Kaikoura, where large numbers of dusky dolphins feed at night on fishes and squid associated with a vertically-migrating scattering layer. We found only limited evidence to support coordinated surface feeding and some evidence for individual feeding, although a potential shift in prey distribution from previous years may explain observed patterns. Feeding groups were positively correlated with seabirds and New Zealand fur seals (Arctocephalus forsteri). Mean group size of 6.1 (± 8.23 S.D., n=253) in Admiralty Bay is dramatically less than groups of generally >100 observed off Kaikoura, a variation likely reflecting differences in prey number and distribution, as well as differences in predation risk by deep-water sharks and killer whales. Further research is necessary to evaluate prey distribution in Admiralty Bay and its possible effects on feeding dusky dolphins.